

BARCO

BARCO DATA
801S

90 00831

90 00838

INSTALLATION MANUAL

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WARNINGS

SAFETY INSTRUCTIONS

on safety

on installation

on servicing

on cleaning

on repacking

on illumination

Notice on Safety

Projectors are built in accordance with the requirements of the international safety standards IEC 950 and UL 1950, which are the safety standards of information technology equipment including electrical business equipment.

These safety standards impose important requirements on the use of safety critical components, materials and isolation, in order to protect the user or operator against risk of electric shock and energy hazard, and having access to live parts. Safety standards also impose limits to the internal and external temperature rises, radiation levels, mechanical stability and strength, enclosure construction and protection against the risk of fire.

Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

INSTALLATION INSTRUCTIONS

Before operating your projector please read this manual thoroughly, and retain it for future reference.

Installation and preliminary adjustments should be performed by qualified BARCO personnel or authorized BARCO service dealers.

OWNER'S RECORD

The part number and serial number are located at the rear of the projector. Record these numbers in the spaces provided below. Refer to them whenever you call upon your BARCO dealer regarding this product.

PART NUMBER:

SER. NUMBER:

DEALER:

SAFETY INSTRUCTIONS



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL



The lightning flash with an arrowhead within a triangle is intended to tell the user that parts inside this product may cause a risk of electrical shock to persons.



The exclamation point within a triangle is intended to tell the user that important operating and/or servicing instructions are included in the technical documentation for this equipment.

WARNING

TO PREVENT FIRE OR ELECTRICAL SHOCK HAZARD, DO NOT EXPOSE THIS PROJECTOR TO RAIN OR MOISTURE

FEDERAL COMMUNICATION COMMISSION (FCC STATEMENT)

This equipment has been tested and found to comply with the limits of a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- * All the safety and operating instructions should be read before using this unit.
- * The safety and operating instructions manual should be retained for future reference.
- * All warnings on the projector and in the documentation manuals should be adhered to.
- * All instructions for operating and use of this equipment must be followed precisely.

On safety

1. This product should be operated from an AC power source

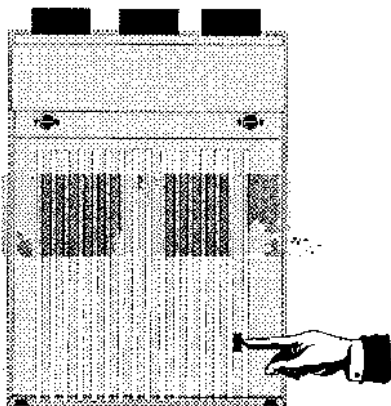
Operating AC power voltage of the projector:

BARCODATA 801S

Art.No. 90 00791 (230V AC)

Art.No. 90 00798 (120V AC)

The type of power source is indicated on the marking label, visible through the clear



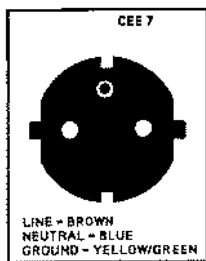
window on the top cover of the projector.

If you are not sure of the type of AC power available, consult your dealer or local power company.

2. This product is equipped with a 3-wire grounding plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

WARNING FOR THE CUSTOMERS: THIS APPARATUS MUST BE GROUNDED (EARTHED) via the supplied 3 conductor AC power cable.
(If the supplied power cable is not the correct one, consult your dealer.)

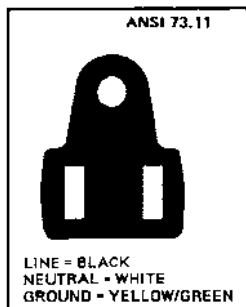
A. Mains lead (AC Power cord) with CEE 7 plug:



The colors of the mains lead are colored in accordance with the following code:

| | |
|-------------------|----------------------|
| Green-and-yellow: | Earth (safety earth) |
| Blue: | Neutral |
| Brown: | Line (Live) |

B. Power cord with ANSI 73.11 plug:



The wires of the power cord are colored in accordance with the following code.

| | |
|---------------|-------------|
| Green/yellow: | ground |
| White: | neutral |
| Black: | line (live) |

3. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

To disconnect the cord, pull it out by the plug. Never pull the cord itself.

4. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating. Also make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

5. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.

Never spill liquid of any kind on the product. Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified service personnel before resuming operations.

6. Lightning - For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the projector due to lightning and AC power-line surges.

On installation

1. Do not place this projector on an unstable cart, stand, or table. The projector may fall, causing serious damage to it.

2. Do not use this projector near water.

3. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the projector and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This projector should not be placed in a built-in installation or enclosure unless proper ventilation is provided.

On servicing

Do not attempt to service this projector yourself, as opening or removing covers may expose you to dangerous voltage potentials and risk of electric shock!
Refer all servicing to qualified service personnel.

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power cord or plug is damaged or frayed.

b. If liquid has been spilled into the projector.

c. If the product has been exposed to rain or water.

d. If the product does not operate normally when the operating instructions are followed. Note:

Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

e. If the product has been dropped or the cabinet has been damaged.

f. If the product exhibits a distinct change in performance, indicating a need for service.

SAFETY INSTRUCTIONS

Replacement parts - When replacement parts are required, be sure the service technician has used original BARCO replacement parts or authorized replacement parts which have the same characteristics as the BARCO original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.

Safety check - Upon completion of any service or repairs to this projector, ask the service technician to perform safety checks to determine that the projector is in proper operating condition.

On cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

- To keep the cabinet looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with mild detergent solution. Never use strong solvents, such as thinner or benzine, or abrasive cleaners, since these will damage the cabinet.
- To ensure the highest optical performance and resolution, the projection lenses are specially treated with an anti-reflective coating, therefore, avoid touching the lens. To remove dust on the lens, use a soft dry cloth. Do not use a damp cloth, detergent solution, or thinner.

On repacking

Save the original shipping carton and packing material; they will come in handy if you ever have to ship your projector. For maximum protection, repack your set as it was originally packed at the factory.

On illumination

In order to obtain the best quality for the projected image, it is essential that the ambient light which is allowed to fall on the screen be kept to an absolute minimum.

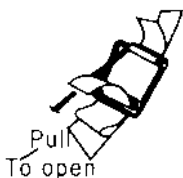
When installing the projector and screen, care must be taken to avoid exposure to ambient light directly on the screen. Avoid adverse illumination on the screen from direct sunlight or florescent lighting fixtures.

The use of controlled ambient lighting, such as incandescent spot light or a dimmer, is recommended for proper room illumination. Where possible, care should also be taken to ensure that the floors and walls of the room in which the projector is to be installed are non-reflecting, dark surfaces. Brighter surfaces will tend to reflect and diffuse the ambient light and hence reduce the contrast of the projected image on the screen.

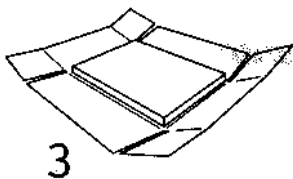
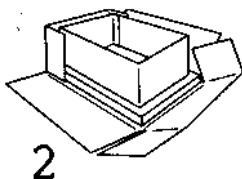
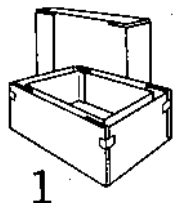
UNPACKING
DIMENSIONS

Unpacking

To open the banding, pull on the clip as shown in the first drawing.

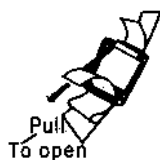


Take the projector out of its shipping carton and place it on a table.



Save the original shipping carton and packing material, they will come in handy if you ever have to ship your projector.

For maximum protection, repack your projector as it was originally packed at the factory.

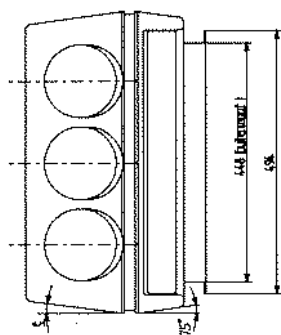


To remount the banding, follow the instructions as given in the drawing above.

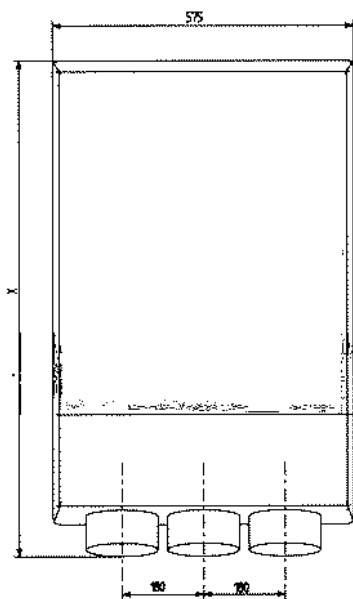
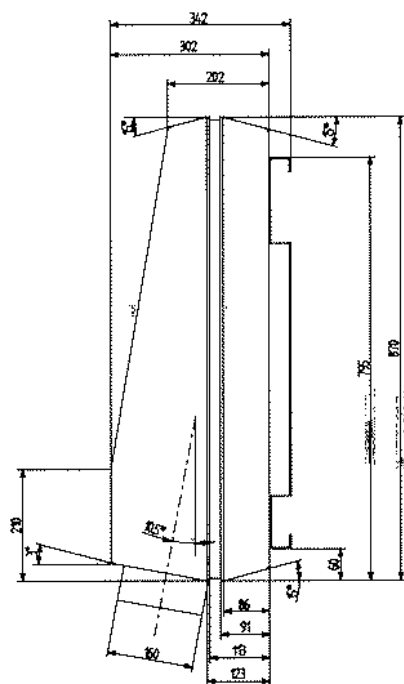
Contents of the shipped box :

- 1 BARCODATA 801S.
- 1 remote control.
- 1 power cable with outlet plug type CEE7 or ANSI 73.11.
- 1 owner's manual.
- 1 installation manual.
- 1 connector clamp
- 1 battery 9V

Projector dimensions



X = 965 mm : HÖ-41 LÄNGEN



INSTALLATION GUIDELINES

Environment

What about ambient light?

Which screen type?

What image size? How big should the image be?

Where to install the projector?

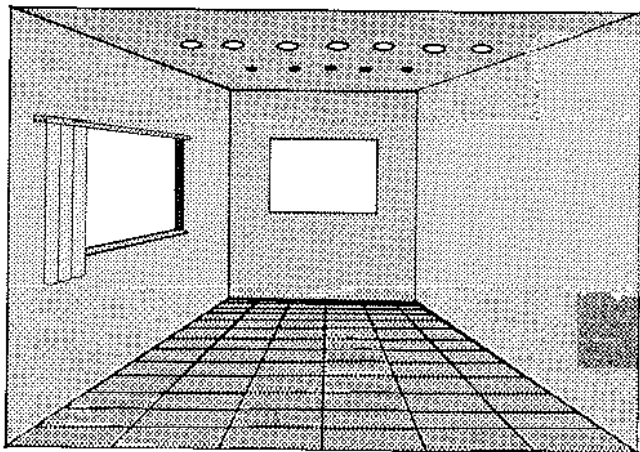
How to install the projector?

Installation guidelines

Careful consideration of things such as image size, ambient light level, projector placement and type of screen to use are critical to the optimum use of the projection system.

* Environment

Do not install the projection system in a site near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust or humidity. Be aware that room heat rises to the ceiling; check that the temperature near the installation site is not excessive.



* What about ambient light ?

The ambient light level of any room is made up of direct or indirect sunlight and the light fixtures in the room. The amount of ambient light will determine how bright the image will appear. So, avoid direct light on the screen.

Windows that face the screen should be covered by opaque drapery while the set is being viewed. It is desirable to install the projecting system in a room whose walls and floor are of non-reflecting material. The use of recessed ceiling lights and a method of dimming those lights to an acceptable level is also important. Too much ambient light results in a 'wash out' of the projected image. This appears as less contrast between the darkest and lightest parts of the image. With bigger screens, the 'wash out' becomes more important. As a general rule, darken the room to the point where there is just sufficient light to read or write comfortably. Spot lighting is desirable for illuminating small areas so that interference with the screen is minimal.

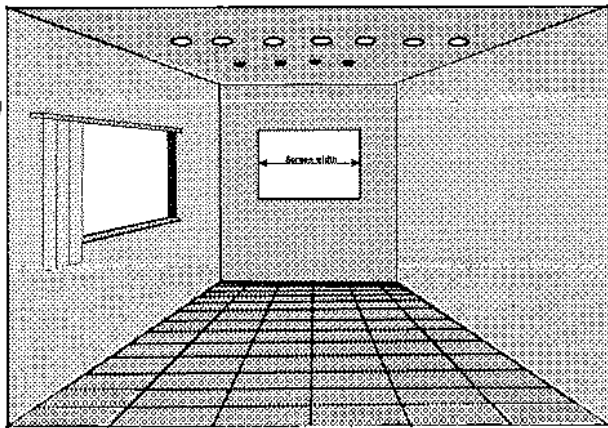
* Which screen type?

There are two major categories of screens used for projection equipment. Those used for front projected images and those for rear projection applications.

Screens are rated by how much light they reflect (or transmit in the case of rear projection systems) given a determined amount of light projected toward them. The 'GAIN' of a screen is the term used. Front and rear screens are both rated in terms of gain. The gain of screens range from a white matte screen with a gain of 1 (x1) to a brushed aluminized screen with a gain of 10 (x10) or more. The choice between higher and lower gain screens is largely a matter of personal preference and another consideration called the Viewing angle.

In considering the type of screen to choose, determine where the viewers will be located and go for the highest gain screen possible. A high gain screen will provide a brighter picture but reduce the viewing angle.

For more information about screens, contact your local screen supplier.



* What image size? How big should the image be?

The BARCODATA 801S is designed for projecting an image width from 1.2m (4') to 6m (20') with an aspect ratio of 4 to 3. It leaves the BARCO factory, adjusted as a ceiling front projector for a screen width of 2.4m. Changing the image size from the factory preset requires a realignment of the projector.

* Where to install the projector?

To indicate a correct installation position it is necessary to know the distance :

- projector - ceiling
- projector - screen

To find this correct position for the BARCOGRAPHICS 801S, equipped with HD8 lenses, 3 possible ways are indicated in the next paragraphs.

- a diagram which indicates PD (projector to screen distance) and a Correction Value A, both in function of the screen width.
- a table which immediately gives the correct position PD and the Correction Value A for different screen widths.
- a formula which directly gives the correct position PD and the Correction Value A.

Abbreviations used on drawing and diagrams on next pages

B = Distance between ceiling and top of the screen.

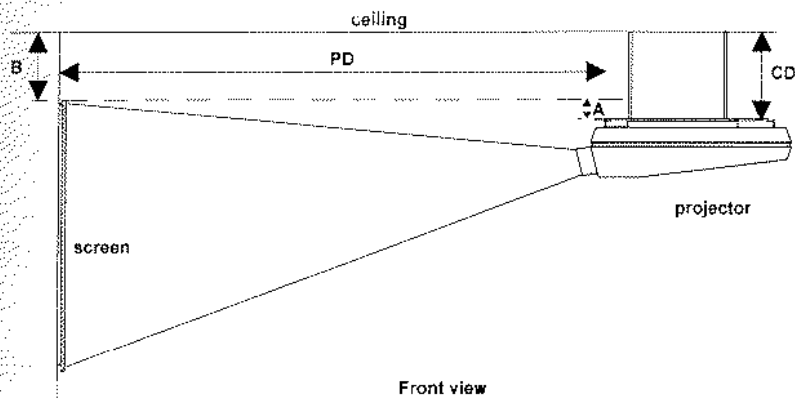
A = Correction Value, extra value to be added to B to obtain the correct installation position. (In some cases the A value can be negative.)

CD = Total distance between projector and ceiling.

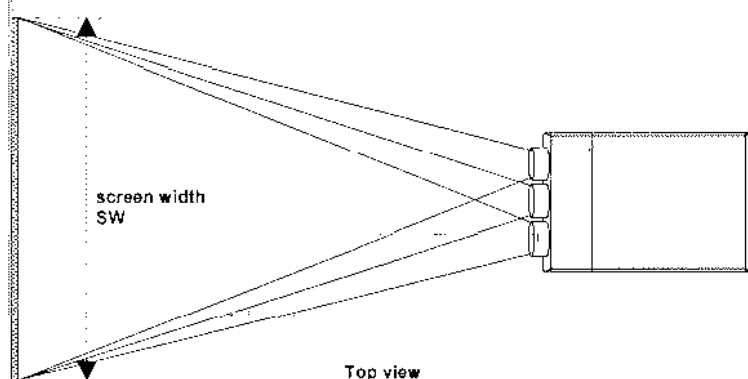
CD = A + B (When the result is negative, enlarge the distance between ceiling and top of the screen, mount screen lower, until CD becomes zero or positive)

SW = Screen width.

PD = Perpendicular distance between screen and projector.



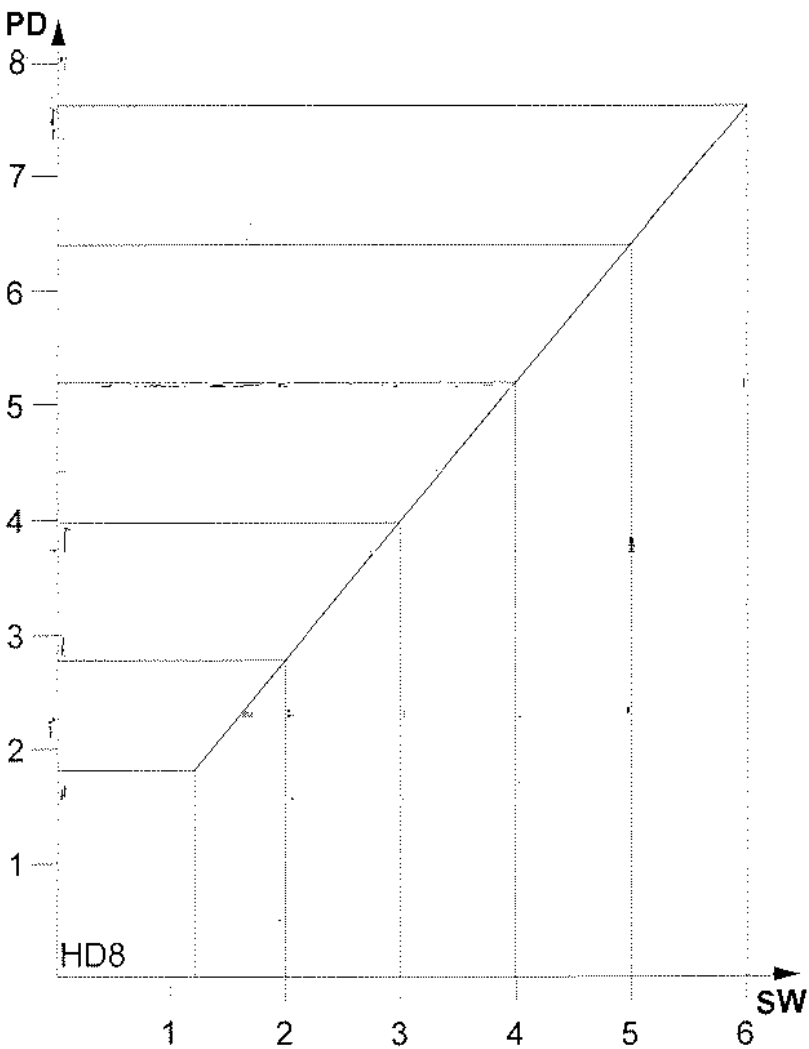
Front view



Top view

Projector to screen distance with regard to the screen width for *HD8 lenses* (metric).

scale : 1.5 cm = 1 m

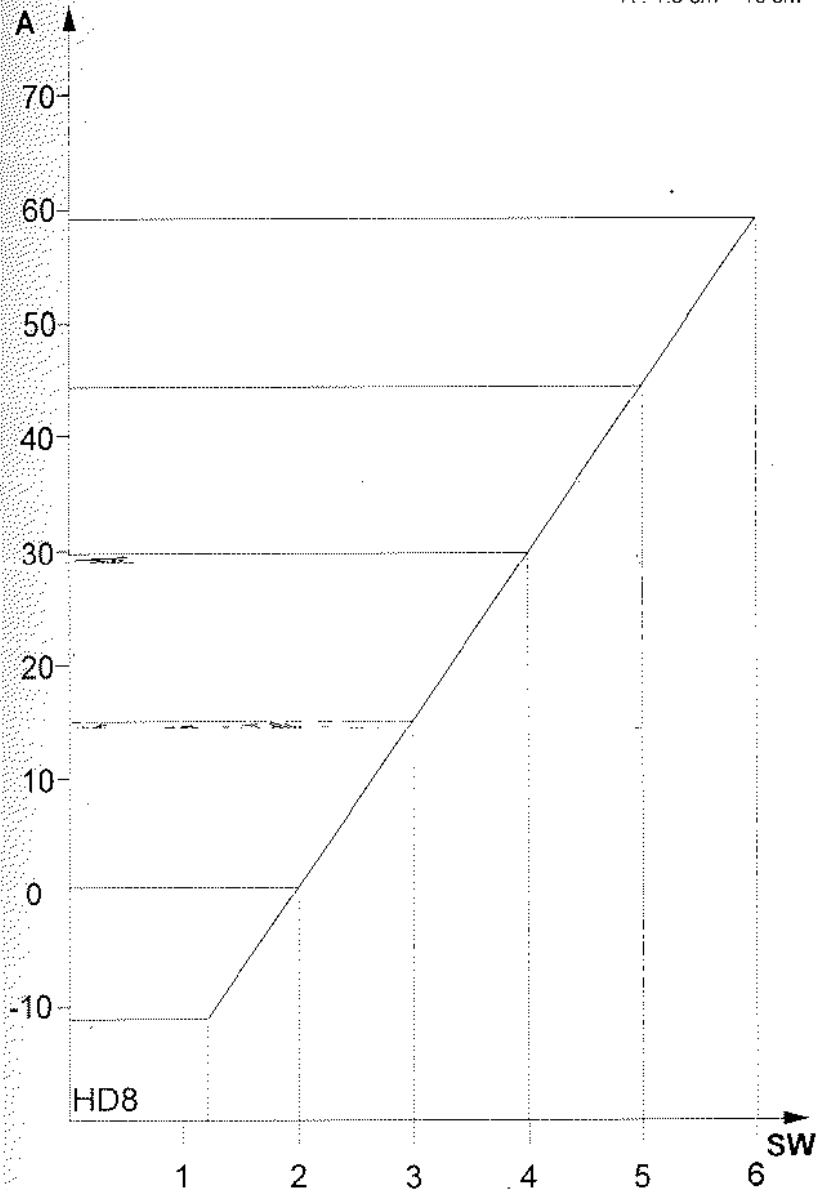


INSTALLATION GUIDELINES

Correction value A with regard to the screen width for *HDB lenses* (metric).

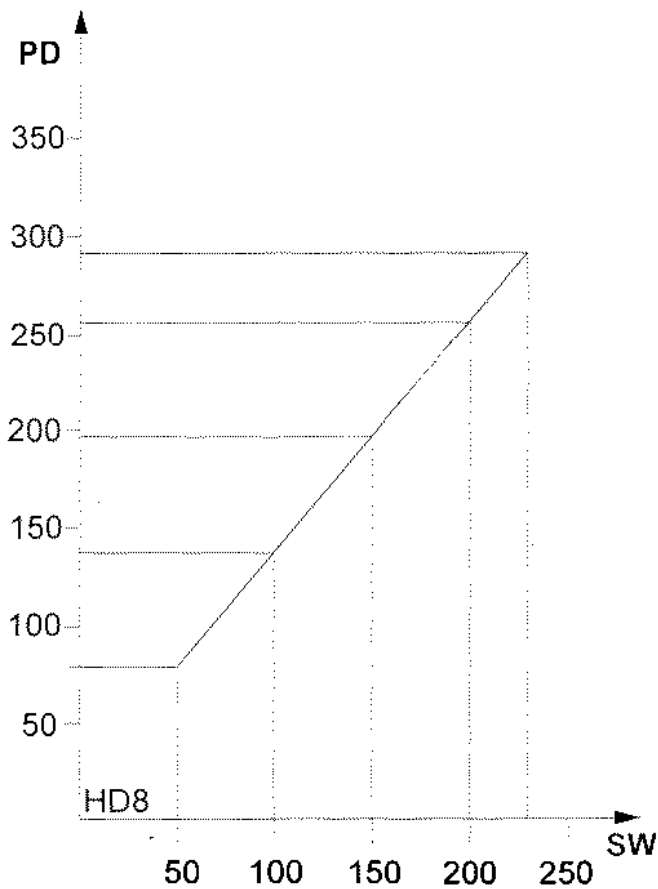
scale : SW : 1.5 cm = 1 m

A : 1.5 cm = 10 cm



Projector to screen distance with regard to the screen width for *HD8 lenses* (inch).

scale : 1 inch = 100 inch

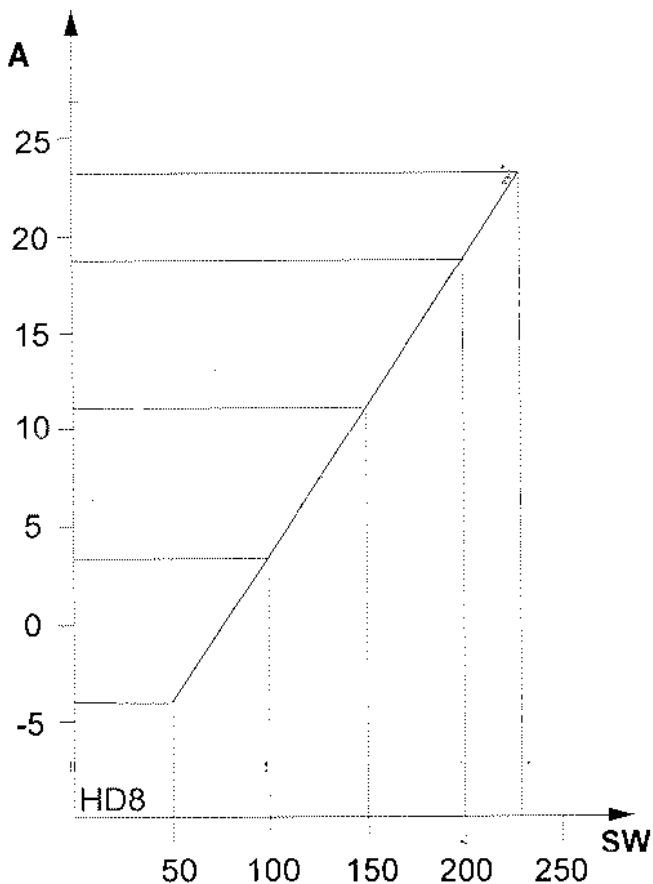


INSTALLATION GUIDELINES

Correction value A with regard to the screen width for *HD8 lenses* (inch).

scale : SW : 1 inch = 50 inch

A : 1 inch = 4 inch



Distance tables for Projector to screen distance and ceiling distance correction value.

| SW [m] | PD [m] | A [cm] |
|-----------|-----------|-----------|
| 1.2 | 1.81 | -10.9 |
| 1.3 | 1.93 | -9.4 |
| 1.4 | 2.05 | -8.0 |
| 1.5 | 2.17 | -6.5 |
| 1.6 | 2.29 | -5.0 |
| 1.7 | 2.41 | -3.6 |
| 1.8 | 2.53 | -2.1 |
| 1.9 | 2.65 | -0.7 |
| 2 | 2.77 | 0.7 |
| 2.1 | 2.89 | 2.2 |
| 2.2 | 3.01 | 3.6 |
| 2.3 | 3.13 | 5.1 |
| 2.4 | 3.25 | 6.5 |
| 2.5 | 3.38 | 8.0 |
| 2.6 | 3.50 | 9.4 |
| 2.7 | 3.62 | 10.9 |
| 2.8 | 3.74 | 12.4 |
| 2.9 | 3.86 | 13.8 |
| 3 | 3.98 | 15.3 |
| 3.1 | 4.10 | 16.7 |
| 3.2 | 4.22 | 18.2 |
| 3.3 | 4.34 | 19.6 |
| 3.4 | 4.46 | 21.1 |
| 3.5 | 4.58 | 22.6 |
| 3.6 | 4.70 | 24.0 |
| 3.7 | 4.82 | 25.5 |
| 3.8 | 4.94 | 26.9 |
| 3.9 | 5.06 | 28.4 |
| 4 | 5.18 | 29.8 |
| 4.1 | 5.30 | 31.3 |
| 4.2 | 5.43 | 32.7 |
| 4.3 | 5.55 | 34.2 |
| 4.4 | 5.67 | 35.7 |
| 4.5 | 5.79 | 37.1 |
| 4.6 | 5.91 | 38.6 |
| 4.7 | 6.03 | 40.0 |
| 4.8 | 6.15 | 41.5 |
| 4.9 | 6.27 | 42.9 |
| 5 | 6.39 | 44.4 |
| 5.1 | 6.51 | 45.9 |
| 5.2 | 6.63 | 47.3 |
| 5.3 | 6.75 | 48.8 |
| 5.4 | 6.87 | 50.2 |
| 5.5 | 6.99 | 51.7 |
| 5.6 | 7.11 | 53.1 |
| 5.7 | 7.23 | 54.6 |
| 5.8 | 7.35 | 56.1 |
| 5.9 | 7.48 | 57.5 |
| 6 | 7.60 | 59.0 |

| SW [inch] | PD [inch] | A [inch] |
|--------------|--------------|-------------|
| 47 | 70.87 | -4.3 |
| 50 | 74.49 | -3.9 |
| 55 | 80.52 | -3.1 |
| 60 | 86.55 | -2.4 |
| 65 | 92.58 | -1.7 |
| 70 | 98.61 | -0.9 |
| 75 | 104.64 | -0.2 |
| 80 | 110.67 | 0.4 |
| 85 | 116.70 | 1.2 |
| 90 | 122.73 | 1.9 |
| 95 | 128.76 | 2.6 |
| 100 | 134.79 | 3.3 |
| 105 | 140.82 | 4.1 |
| 110 | 146.85 | 4.8 |
| 115 | 152.88 | 5.5 |
| 120 | 158.91 | 6.3 |
| 125 | 164.94 | 7.0 |
| 130 | 170.97 | 7.7 |
| 135 | 177.00 | 8.4 |
| 140 | 183.03 | 9.2 |
| 145 | 189.06 | 9.9 |
| 150 | 195.09 | 10.6 |
| 155 | 201.12 | 11.4 |
| 160 | 207.15 | 12.1 |
| 165 | 213.18 | 12.8 |
| 170 | 219.21 | 13.5 |
| 175 | 225.24 | 14.3 |
| 180 | 231.27 | 15.0 |
| 185 | 237.30 | 15.7 |
| 190 | 243.33 | 16.5 |
| 195 | 249.36 | 17.2 |
| 200 | 255.39 | 17.9 |
| 205 | 261.42 | 18.6 |
| 210 | 267.45 | 19.4 |
| 215 | 273.48 | 20.1 |
| 220 | 279.51 | 20.8 |
| 225 | 285.54 | 21.6 |
| 230 | 291.57 | 22.3 |
| 235 | 297.60 | 23.0 |
| 237 | 300.01 | 23.3 |

Formulas

metric

$$PD[m] = 1.206 \times SW[m] + 0.360$$

$$CD[cm] = 14.57 \times SW[m] - 28.40$$

inches

$$PD[inch] = 1.206 \times SW[inch] + 14.19$$

$$CD[inch] = 0.1457 \times SW[inch] - 11.18$$

* How to install the projector?

Ceiling mount or table mount?

To install the BARCODATA 801S, apply always the BARCO kits which are specially designed for this function.

BARCO ceiling support.

Always use the BARCO ceiling support to attach your BARCODATA 801S to the ceiling. (BARCO order number : 98 25550)

The installation instruction for this support is enclosed in the packet of the set.

BARCO projection table.

Height adaptable projection table provides a stable stand for your projector, and makes it possible to adapt the projector perfectly to the local requirements. (BARCO order number 98 27740).

INSTALLATION SET UP

Access to controls

Scan adaptation

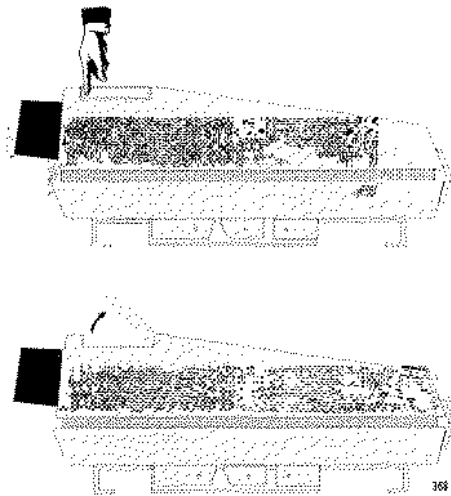
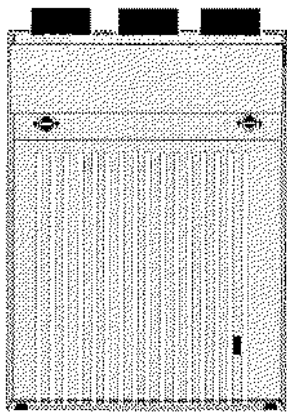
ACCESS TO CONTROLS.

The top cover of the BARCODATA 801S has a unique user friendly design.

a. Optical focusing and lens angle adjustment.

Opening procedure :

Pull on the sides of the cover (BARCO logo on it) to unlock the cover and turn it over to get access to the controls.



Closing the cover :

Rotate the cover to close and press once on the cover.

b. Access to projector controls.

The set up controls are situated on the controller unit, the termination switches are on the boards itself. To get access, follow the next procedure.

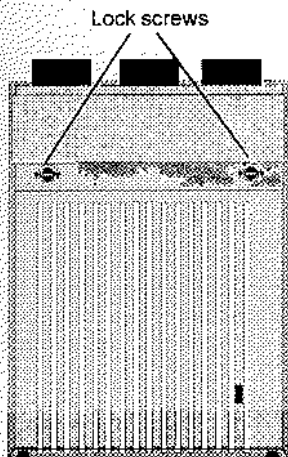
Top cover removal :

* Turn both lock screws with a screwdriver or a coin counter clockwise.

* Lift up and pivot the top cover.

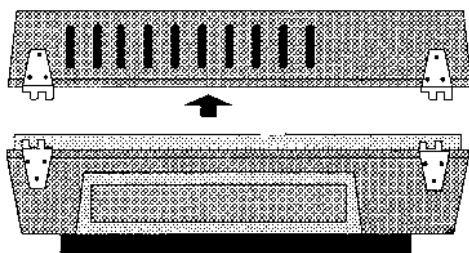
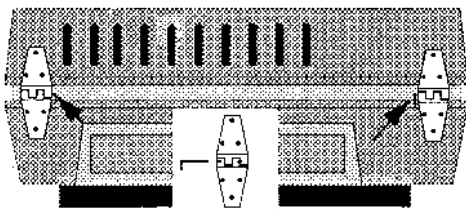
Attention : Top cover is not secured with an incorporated support. Be aware not to flip over and break the hinges.

INSTALLATION SET UP



During some installations it will become handy to remove the top cover totally. Therefore,

- * Pull out the two hinge-joints
- * Lift up the top cover.



Scan adaptation

The scan switches must be placed in the correct position

Warning

TURN OFF PROJECTOR AND UNPLUG THE POWER CORD BEFORE CHANGING A SCAN SWITCH POSITION

A : horizontal scan inversion

Three switches are used, one for each CRT. When changing the horizontal scan, insure that all three switches are left in the same position. See position of the switches (diagrams on next page) for the corresponding projector position.

B : Vertical scan inversion

One switch for the three CRT's is used. See position of the switch (diagrams on next page) for the corresponding projector position.

Procedure :

Make sure that the projector is switched off and the power cord is disconnected.

- Open the top cover.

For horizontal scan inversion :

- toggle the positions of the three horizontal scan inversion switches.

For vertical scan inversion :

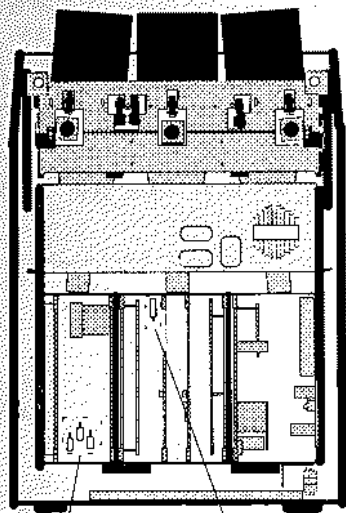
- toggle the position of the single vertical scan inversion switch.

After scan inversion, close the top cover and reconnect the power cord to the wall outlet

Note

Switching over from floor to ceiling or vice versa requires a complete readjustment of picture geometry and convergence.

INSTALLATION SET UP



Horizontal
scan switch

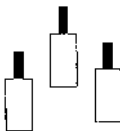
Vertical scan
switches

Horizontal
scan switch

Vertical scan
switches



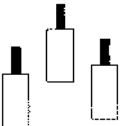
FRONT - CEILING



REAR - CEILING



REAR - TABLE



FRONT - TABLE



Check :

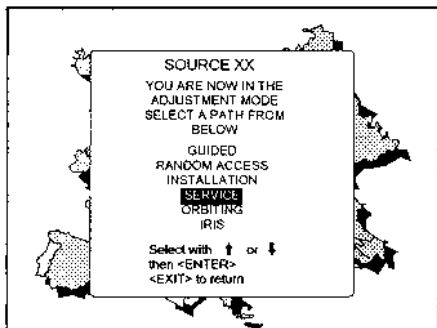
Note : this check procedure can only be done after power (mains) connection. So, continue first with the *Projector set up* and the *connections* and return then to this checking procedure.

Switch on the BARCODATA 801S and look at the "*BARCO start up screen*". This screen is available in the '*Service mode*'. There you will find an indication of the projectors configuration.

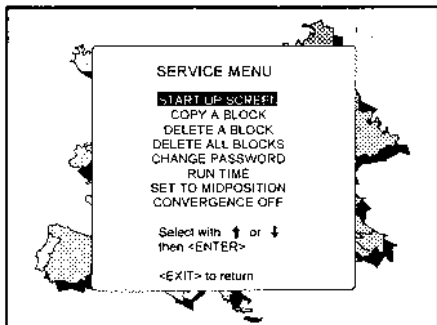
Configuration when leaving the factory : ceiling/front configuration for a screen size of 2.40m.

Follow next procedure :

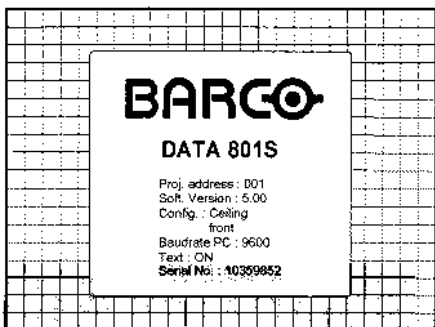
- switch on the projector.
- the projector starts up on the last selected source.
- press the **ADJUST** key on the RCU800.
- your password will be asked (if activated).
If it is correct, the path selection menu will be displayed.
- select with the arrow keys 'Service' and press **ENTER**. The service mode menu will be displayed.



- highlight with the arrow keys 'start up screen' and press **ENTER**.



The projector displays the BARCO start up screen.
This screen gives information about the projector configuration in the subject *'config'*.



PROJECTOR SET UP

PROJECTOR ADDRESS

POWER UP MODE

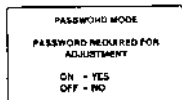
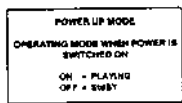
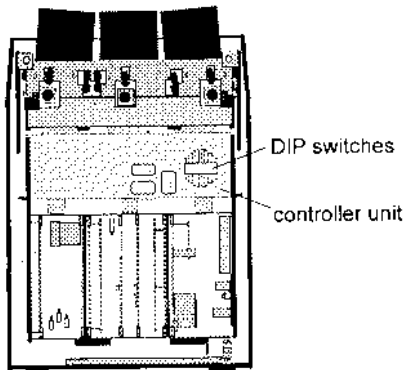
BAUD RATE FOR COMMUNICATION WITH A COMPUTER

PASSWORD

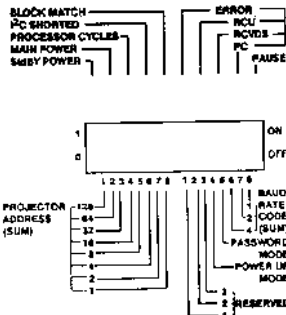
Projector set up.

The DIP switches on the controller unit allow a set up of the projector.

- projector address (8 DIP switches)
- Power up (1 DIP switch)
- baud rate (3 DIP switches)
- password (1 DIP switch)



| BAUD RATE TABLE IN COMPUTER | |
|--------------------------------|-------|
| CODE | SPEED |
| 0 | 110 |
| 1 | 150 |
| 2 | 300 |
| 3 | 600 |
| 4 | 1500 |
| 5 | 2400 |
| 6 | 4800 |
| 7 | 9600 |



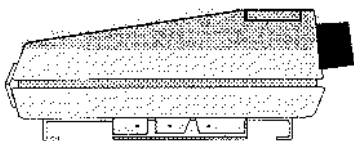
Setting the projector address.

The projector's address may be set to any value between 0 and 255. When the address is set, the projector can be controlled now :

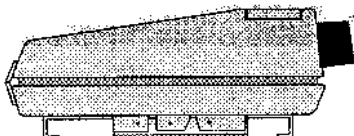
- RCU800 for addresses between 0 and 9.
- IBM PC (or compatible) or Apple MAC for addresses between 0 and 255.

Addressable with RCU800

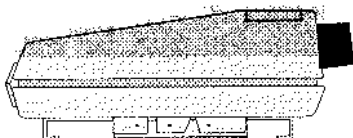
Addressable with PC, MAC
or workstation



0



9



255

Address setting is a hardware set up of your projector which must be done during installation. Therefore 8 DIP switches are provided on the controller unit.

Each DIP switch has its own decimal value. The summary of the values associated to those DIP switches gives the address (see table 'address setting').

| Switch | Value |
|--------|-------|
| 1 | 128 |
| 2 | 64 |
| 3 | 32 |
| 4 | 16 |
| 5 | 8 |
| 6 | 4 |
| 7 | 2 |
| 8 | 1 |

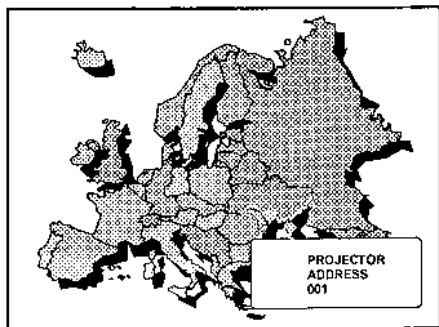
Example : address 202

| | | | | | | | | |
|------------|---|---|---|---|---|---|---|---|
| DIP switch | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| setting | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |



Summary : $1 \times 128 + 1 \times 64 + 0 \times 32 + 0 \times 16 + 1 \times 8 + 0 \times 4 + 1 \times 2 + 0 \times 1 = 202$

Note : when the address button on the RCU800 is pressed, the projector will display its own address on the screen. Once the address button is pressed, to continue using your RCU, it is necessary to enter an address, even when the displayed address is correct. Use the numeric keys to enter the address.



PROJECTOR SET UP

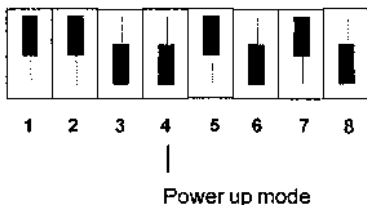
Power up mode.

The projector can start up in two different modes. The start up mode is determined by the position of DIP switch 4 on the controller unit.

Position of the DIP switch 4 :

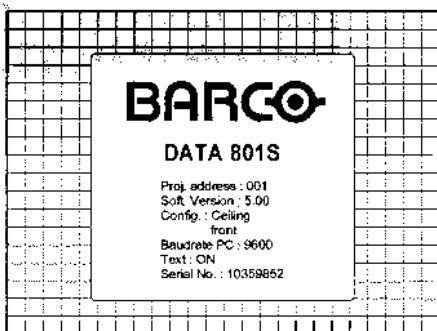
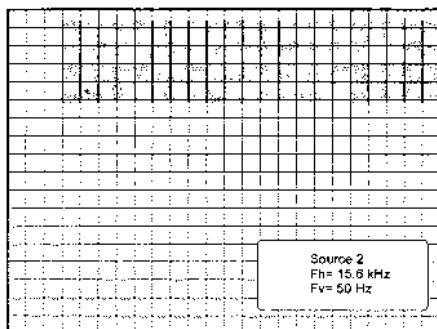
ON : operational mode

OFF : stand by mode



1. Operational mode :

When the power switch on the rear of the projector is pressed, the projector displays the last selected source if available, otherwise the BARCO start up screen is displayed if no source is present.



2. Stand by mode :

When the power switch on the rear of the projector is pressed, the projector goes into stand-by mode. The stand-by key on the RCU800 is used to turn the projector ON and OFF.

Baud rate for communication with a IBM PC (or compatible) or MAC.

The communication speed between projector and PC or MAC has 8 possible settings. With DIP switches 6, 7 and 8 on the controller unit, labelled 'Baud rate code (sum)', it is possible to select the baud rate (communication speed). Each DIP switch has its own decimal value. The summary of the values associated to those DIP switches gives the baud rate code. With each baute rate code corresponds an communication speed.

Position of DIP switches and baute rate codes

baute rate code speed

| | |
|---|------|
| 0 | 110 |
| 1 | 150 |
| 2 | 300 |
| 3 | 600 |
| 4 | 1200 |
| 5 | 2400 |
| 6 | 4800 |
| 7 | 9600 |



Baud rate DIP switches

More information about computer communication with the BARCODATA 801S is available in the Control 800 software manual (order number for DOS : 59 75014, for MAC : 59 75224).

Password mode

With DIP switch 5 on the controller unit, the projector adjustments can be protected with a password. When the password feature is enabled, the customer has to enter a password before he can enter the adjustment mode (for more information about password setting and reprogramming the password, see Installation adjustment).

When the password menus are disabled (adjust mode is unprotected), the adjust mode can be selected by pressing on the **ADJUST** key. This position of the DIP switch is useful for qualified service technicians because they do not need a password to enter the adjust mode.

Position of DIP switch 5 :

ON : password mode enabled
OFF : password mode disabled



Password mode

POWER CONNECTION

POWER (MAINS) CONNECTION

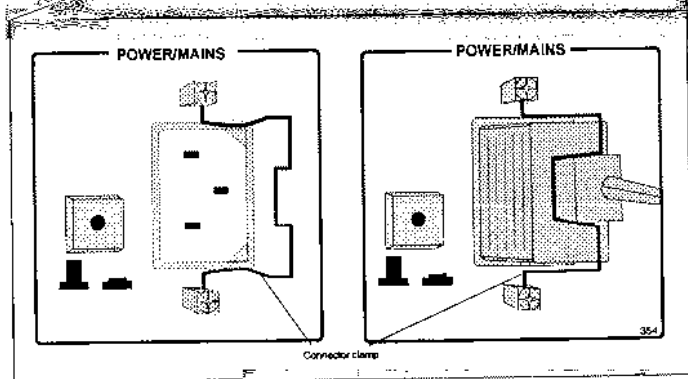
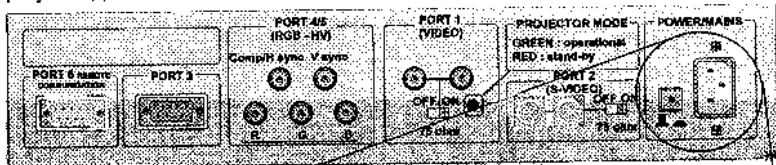
POWER CONNECTION

Power (mains) cord connection

Use the supplied cord to connect your projector to the wall outlet. Plug the female power connector into the male connector at the back of the projector. This projector may be connected to an IT-power system.

Attention :

Before plugging the female power connector into the male connector on the projector, put the connector clamp in the clamp holder.

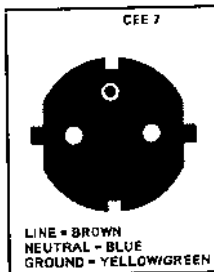


Preparing your power cord

A. Mains lead (power cord) with CEE7 plug.

As the colors of the wires in the mains lead of this apparatus may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

- The green/yellow wire must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or colored green and yellow.
- The blue wire must be connected to the terminal marked with the letter N or colored black.
- The brown wire must be connected to the terminal marked with the letter L or colored red.



POWER CONNECTION

The wires of the delivered mains lead (power cord) are colored in accordance with the following code :

Green and yellow : ground

Blue : neutral

Brown : live

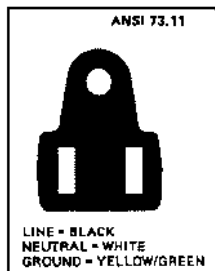
B. Power cord with an ANSI 73.11 plug

The wires of the delivered mains lead (power cord) are colored in accordance with the following code :

Green and yellow : ground (earth)

White : neutral

Black : live

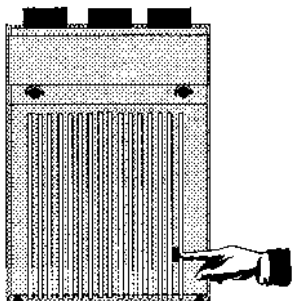


Power check

Warning

Check by looking through the little window on the top cover if the indicated power voltage corresponds to that of the wall outlet.

If the indication is different from that of the wall outlet, call a qualified technician for power adaptation of the projector.



Input power (mains) voltage adaptation.

Attention

The BARCODATA 801S - 90 00831 leaves the factory to operate on a mains (power) input of 230 Vac.

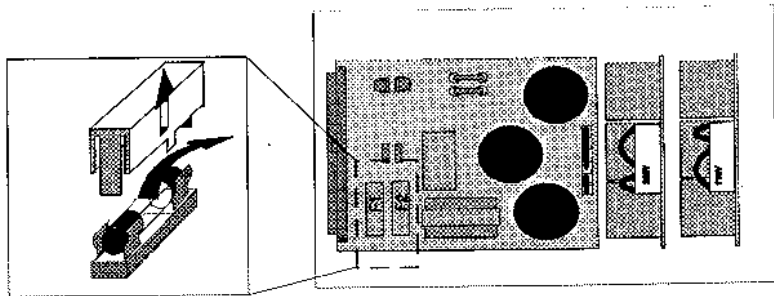
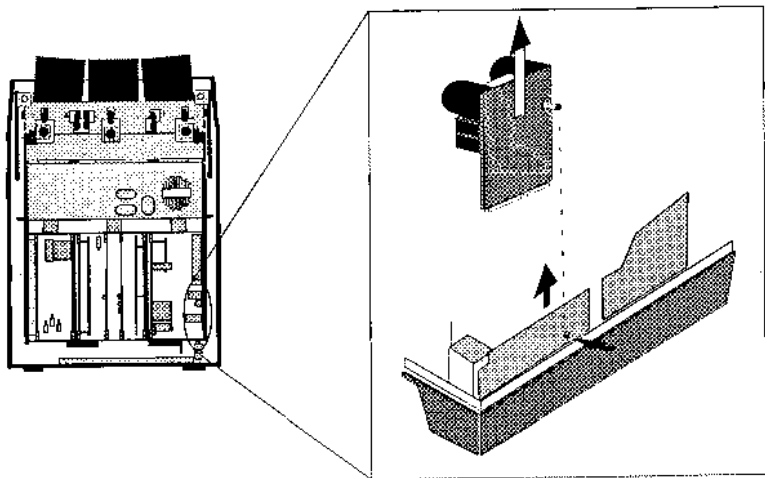
The BARCODATA 801S - 90 00398 leaves the factory to operate on a mains (power) input of 120 Vac.

Adaptation of the power input of the projector between 230 Vac and 120Vac or vice versa is possible.

Follow the procedure as described below.

Procedure :

1. Open the top cover (see Getting access to the controls)
2. Unscrew the retaining screw of the power input board and pull out this board.
3. Pull out the 'power selector plug' and re-insert it as illustrated in the drawing below, depending on the wall outlet in the room.
4. Pull out the fuses and place the correct fuses in their sockets. See table on next page for the correct fuses.
5. Re-insert the power input board and secure it with the retaining screw.



Fuses

Warning

For continued protection against fire hazard :

- replace with the same type of fuse.
- refer replacement to qualified service personnel

F1, F2

For 230 Vac(2x) T3.15A H/250V

For 120 Vac(2x) T5A H/250V

BARCO ord. no.

31 4103

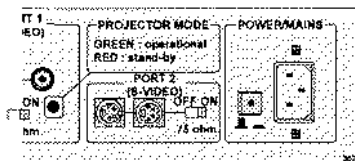
31 4104

Switching on

The projector is switched ON and OFF using the power (mains) switch ON/OFF.

Pressed : ON

Not pressed : OFF



The projector can start now in the 'operational mode' (image displayed) or in the 'stand by mode', depending on the position of the 'power up' dip switch on the controller unit. This DIP switch is set during installation by a qualified technician. If you want to change this start up mode, call a qualified technician.

Power indication lamp :

OFF : no power

Green : projector in operational mode

Red : projector in stand by mode

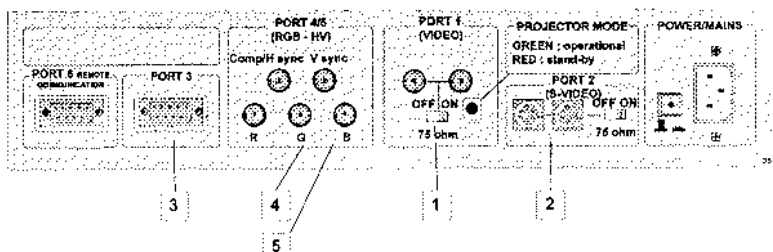
CONNECTIONS

Source connections

Peripheral equipment

Signal input connections to a stand alone projector

Five different types of input sources may be connected directly to the BARCODATA 801S (even seven different input sources if the optional HDTV tri level sync module is installed).



| Source No | Projector input | Press digit button |
|-----------|-----------------|--------------------|
| 1 | Comp. Video | 1 |
| 2 | S-Video* | 2 |
| 3 | RGB analog | 3 |
| 4 | RGsB** | 4 |
| 5 | RGBS*** | 5 |
| 4 | RG3sB**** | 6 |
| 5 | RGB3S***** | 7 |

* Input signal Y/C (luma/chroma)

** Input signal : R, G and B with sync on G

*** Input signal : R, G and B with separate composite sync (S) or H+V sync

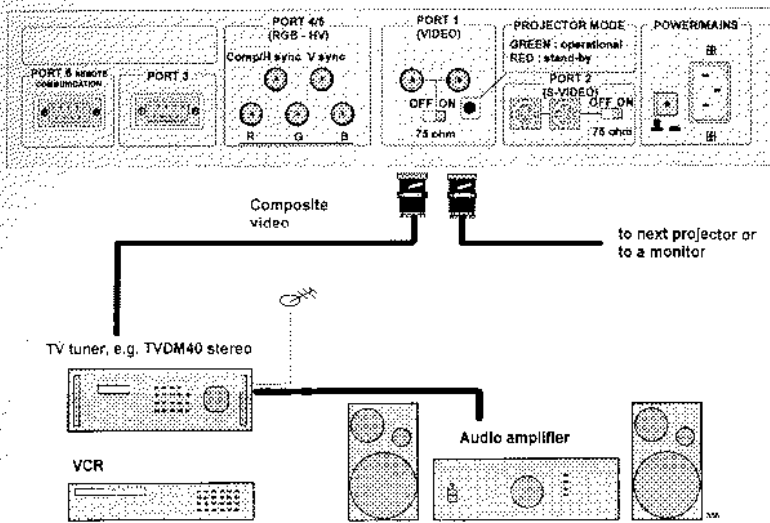
**** Input signal : R, G and B with Tri level sync on G

***** input signal : R, G and B with separate Tri level sync on 'comp/H sync'

these inputs are only available when the optional HDTV tri level sync module is installed.

Connecting a Composite Video source to port 1.

Composite video signals from a VCR, OFF air signal decoder, etc...



Video input selection :

Press digit button 1 on the RCU800.

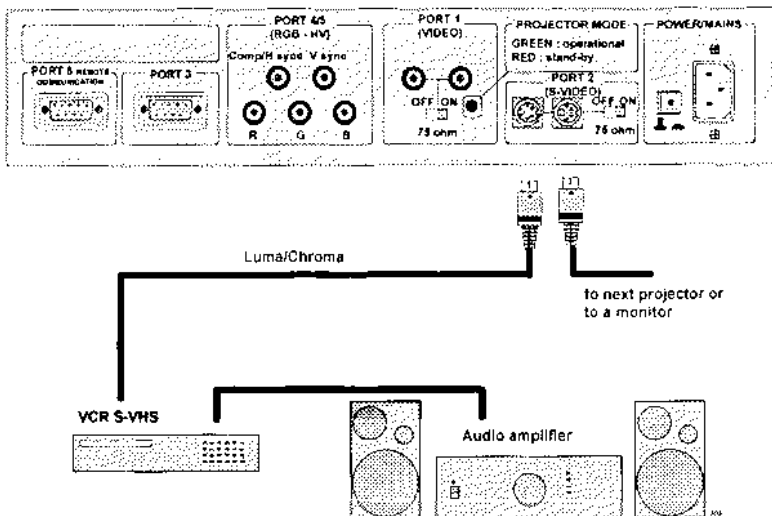
75 ohm termination switch.

Terminate the video input of the projector using the 75 ohm switch next to the video input panel when the projector operates alone or when it is the last projector on the video line when the projectors are connected in a loop through configuration.

- ON : signal terminated
- OFF : signal not terminated

Connecting an S-Video source to port 2

Separate Y-luma/C-chroma signals for higher quality playback of Super VHS signals.



S-Video input selection :

Press digit button 2 on the RCU800.

75 ohm termination switch.

Terminate the S-video input of the projector using the 75 ohm switch next to the S-video input panel when the projector operates alone or when it is the last projector on the S-video line when the projectors are connected in a loop through configuration.

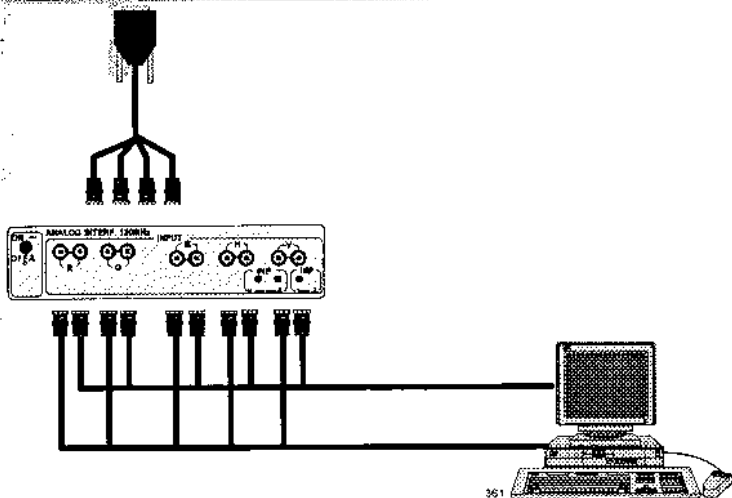
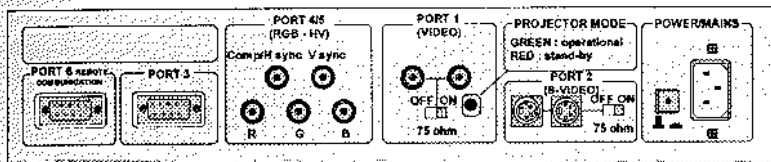
ON : signal terminated

OFF : signal not terminated

Connecting a RGB Analog source to port 3.

Connect your Analog source via an interface to Port 3.

RGB analog input with automatic sync detection. (Separate H and V sync inputs, with composite sync input or with sync signals on green.)



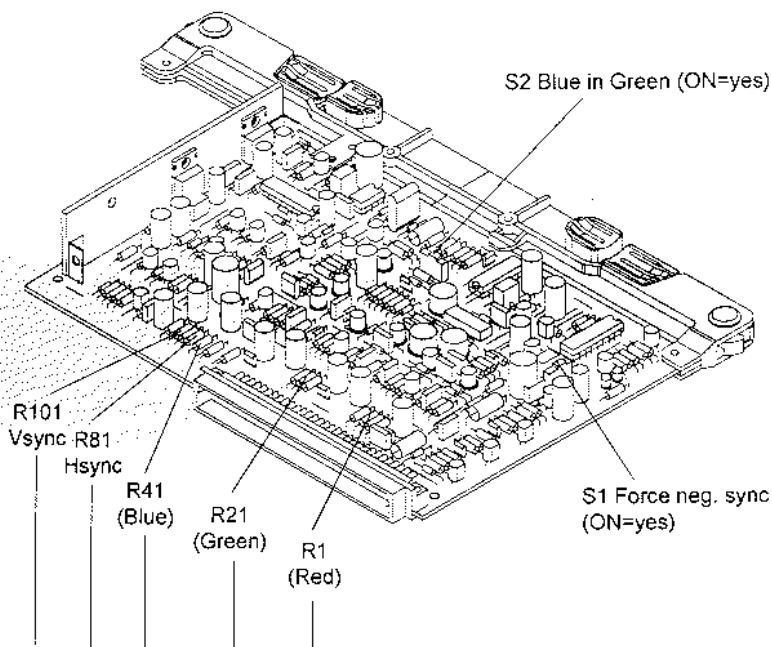
Pin configuration D9 connector of the Analog input.

- 1 not connected
- 2 ground RGBS
- 3 RED
- 4 GREEN
- 5 BLUE
- 6 ground RGBS
- 7 ground RGBS
- 8 Hor/comp. sync
- 9 Vert. sync

Analog input selection :
Press digit button 3 on the RCU800.

Resistors and switches on board level

When changing a switch position or removing a resistor, turn off the projector and unplug the power cord from the wall outlet.



Line termination 75 Ω resistors

Procedure :

- power down the projector and unplug the projector power cord.
- open the top cover.
- pull out the RGB input auto syn tracking module from the mother board.
- unsolder and remove the resistors or switch over the switches.

75 Ω termination switches.

In case of chaining the projectors, the 75 ohm line termination resistors must be on board when the projector is the last unit in the chain.

Resistors on board : 75 Ω terminated

Resistors removed : not terminated

In case of stand alone projectors, do not remove the resistors.

Blue in green switch.

Blue characters are difficult to read, therefore the blue text will be displayed as cyan so that the readability becomes better.

Switch in the ON position : blue in green active.

Switch in the OFF position : blue in green disabled.

Force to neg. Sync.

Switch in the ON position : the sync pulses must be negative.

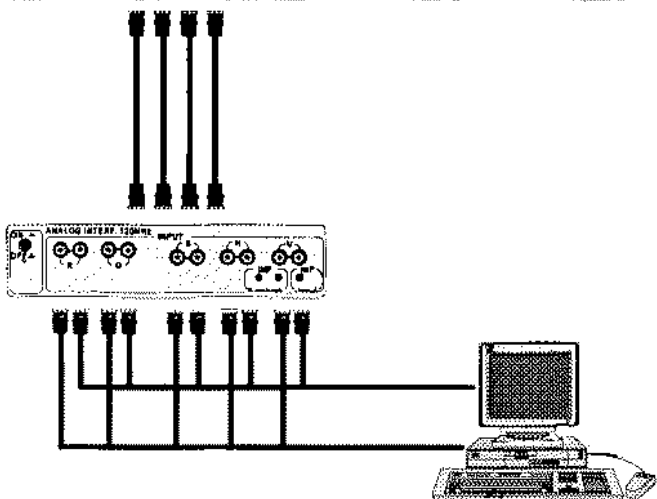
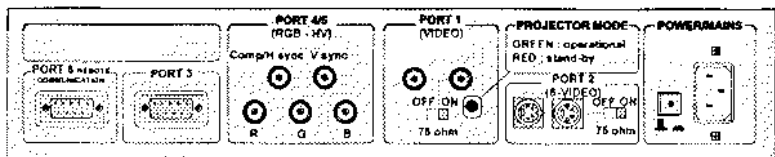
Switch in the OFF position : the sync polarity will be automatically detected.

Connecting a RGB analog source to port 4/5.

RGB analog input terminals with separate H and V sync inputs, with composite sync inputs or with sync signals on green.

Always use an interface when a computer and local monitor have to be connected to the projector. Interfaces to be applied :

- universal analog interface. Order number : 98 26100.
- RGB 120 MHz analog interface. Order number : 98 26570.



RGB input selection :

(RGB : R, G B signals with sync on green)

Press digit button 4 on the RCU800.

RGBS input selection :

(RGBS : R, G, B and separate sync; H- and V- sync or comp. sync)

Press digit button 5 on the RCU800.

CONNECTIONS

Line termination : the RGB analog inputs are factory line terminated.

Stand alone projector : inputs must be line terminated.

Last projector in a loop through configuration : inputs must be line terminated.

In case of chaining the projectors with T-BNC connectors (BARCO order number : 31 3668) remove the line termination jumpers on the RGB analog input module.

Warning

When removing the jumpers, turn off the projector and unplug the power cord from the wall outlet.

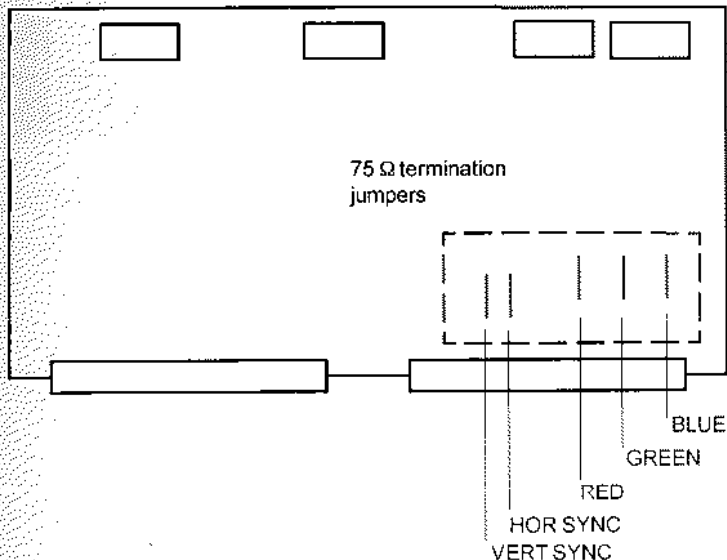
Procedure

- power down the projector and unplug the projector power cord.
- open the top cover.
- Pull out the RGB analog input module from the mother board.
- Unsolder and remove the jumpers.

Jumpers on the module : 75 ohm terminated

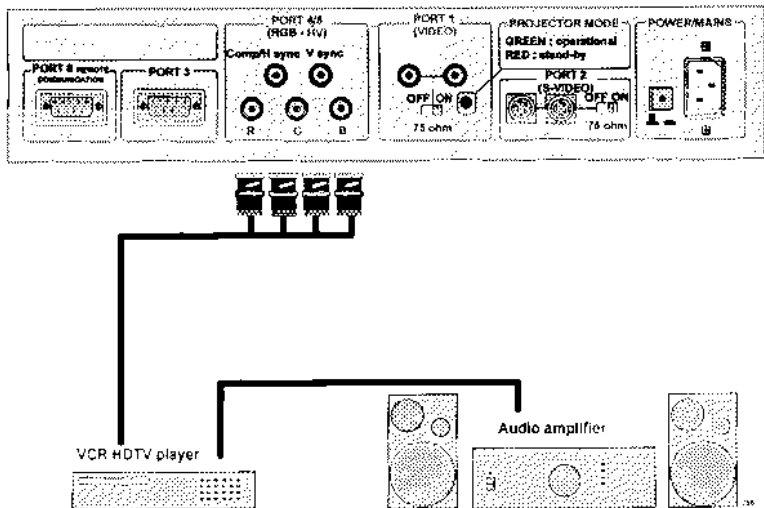
Jumpers removed : not terminated

Location of jumpers on the module.



Connecting a RGB analog source with tri level sync to port 4/5. (option)

RGB analog input terminals with tri level sync input or with tri level sync signals on green.



RG3sB input selection :

(RG3sB : R, G B signals with tri level sync on green)

Press digit button 6 on the RCU800.

RGBS input selection :

(RGB3S : R, G, B and separate tri level sync)

Press digit button 7 on the RCU800.

Line termination : the RGB analog inputs are factory line-terminated. *

Stand alone projector : inputs must be line terminated.

Last projector in a loop through configuration : inputs must be line terminated.

In case of chaining the projectors with T-BNC connectors (BARCO order number : 31 3668) remove the line termination jumpers on the RGB analog input module.

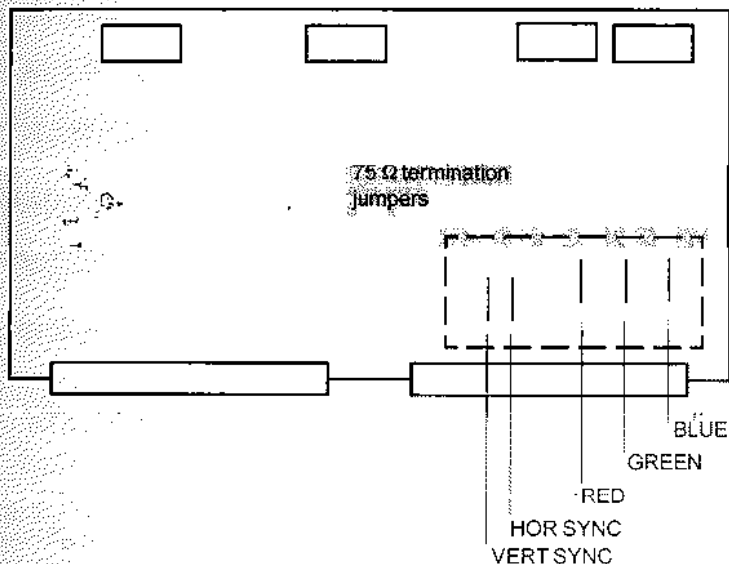
Warning

When removing the jumpers, turn off the projector and unplug the power cord from the wall outlet.

Procedure :

- power down the projector and unplug the projector power cord.
 - open the top cover.
 - Pull out the RGB analog input module from the mother board.
 - Unsolder and remove the jumpers.
- Jumpers on the module : 75 ohm terminated
Jumpers removed : not terminated

Location of jumpers on the module.



Connecting a computer (e.g. an IBM PC or compatible, Apple Macintosh or Workstation) to the BARCODATA 801S.

The BARCODATA 801S projector has a RS232 port that allows it to communicate with a computer. (RS422, 'Macintosh', can be directly connected to the projector's port without any problem if you respect RS232 distances and baudrates.)

Applications :

Two main applications : remote control and data communications.

a) remote control :

- easy adjustment of projector via IBM PC (or compatible) or MAC connection.
- allow storage of multiple projector configurations and set ups.
- wide range of control possibilities.
- address range from 0 to 255.

b) data communications :

- sending adjustment data to the projector or copying the adjustment data from the projector to a hard memory device.

When chaining projectors, slave the output on the front side through to the input of the next projector.

More information about this feature is included in the 'Control 800' software manual which is delivered together with the software or which can be ordered at BARCO.

Connecting a RCVDS800 to the BARCODATA 801S.

- Up to 10 inputs immediately accessible with one RCVDS 800 and up to 90 inputs accessible when 10 RCVDS 800's are connected in series.
- Serial communication with the projector.
- Remote control buttons on the RCVDS 800 to control the BARCODATA 801S (source selection and analog settings)
- The selected source number will be displayed on a 2 digit display and the selected input modules will be indicated with a LED on the rear.

For more information about the use of the RCVDS 800, consult the RCVDS 800 owner's manual, BARCO order number : 59 75004.

Connecting an IR Remote Receiver 800 to the BARCODATA 801S.

This infra-red receiver unit makes it possible to control the BARCODATA 801S from another room. There is a communication line cable between the IR receiver and the projector or the RCVDS 800. The control information from the RCU800 can now be sent to the IR Remote Receiver 800. The IR Remote Receiver 800 displays the selected source on a 7-segment display.

Order number : 98 27515.

INSTALLATION ADJUSTMENT MODE

Installation adjustment mode

Overview flowchart installation adjustment mode

Access to optical controls

Installation adjustment procedure

Optical lens focusing

Raster centering

CRT angle correction

Before starting any adjustment.

The BARCODATA 801S is factory optimized for a screen with range 1.9m (74.8 inch) to 3.2m (126.0 inch)

You wish an optimal focused image
for a screen width between 1.2m to 1.9m
or between 3.2m and 6m?
then,
carry out the following mechanical adaptation :

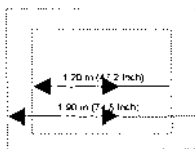
Mechanical adaptation procedure (adding washers between lens and picture tube support)

The screen width adjustment for the installed lens is divided into 3 ranges. Within these ranges, the focus can be optimal adjusted.

range 1

min. SW : 1.20 m (47.2 inch)

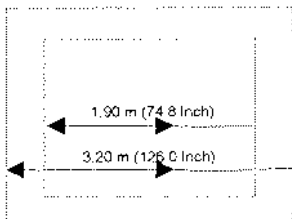
max. SW : 1.90 m (74.8 inch)



range 2

min. SW : 1.90 m (74.8 inch)

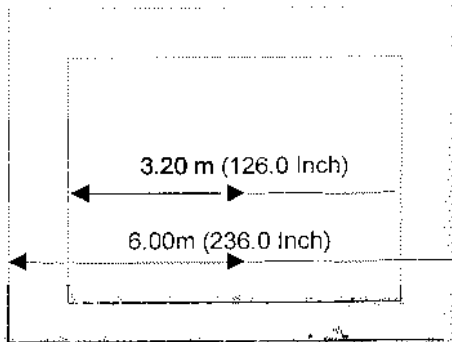
max. SW : 3.20 m (126.0 inch)



range 3

min. SW : 3.20 m (126.0 inch)

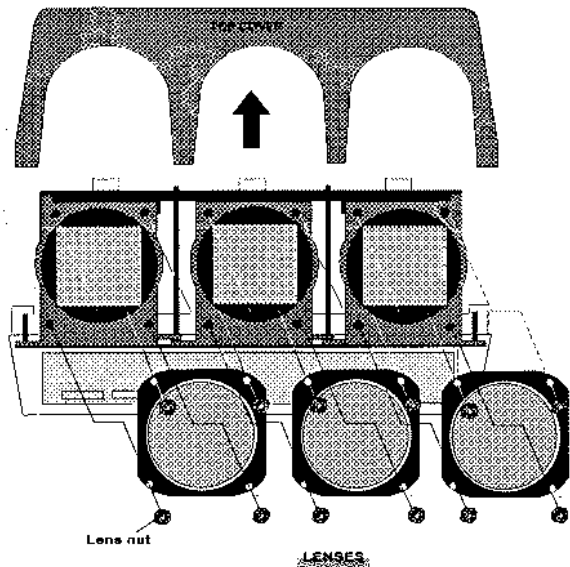
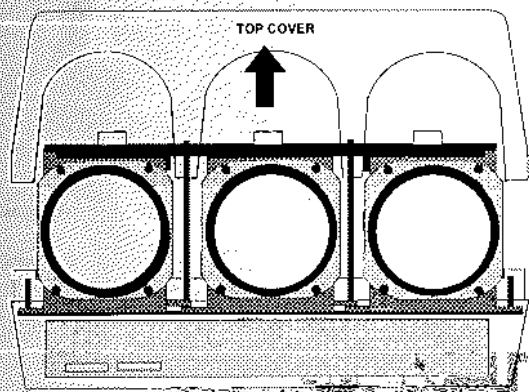
max. SW : 6.00 m (236.0 inch)



INSTALLATION ADJUSTMENT MODE

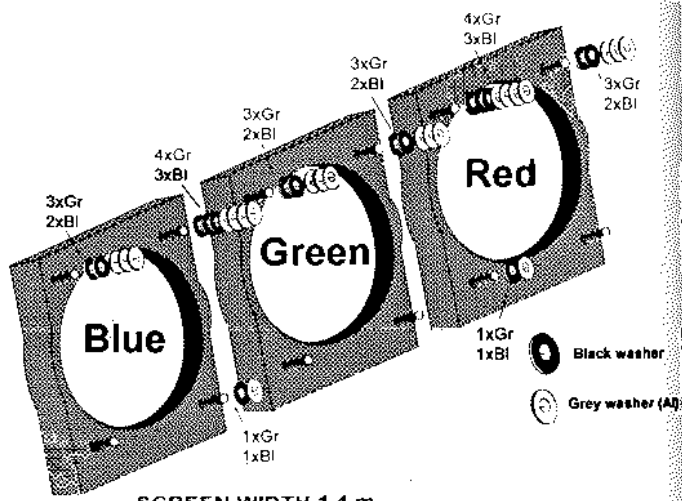
Adaptation procedure :

1. Open and remove the top cover
2. Remove the lenses by :
 - remove for each lens the 4 nuts, holding lens to picture tube support (nutdriver 8 mm)
 - remove lens from the bolts.

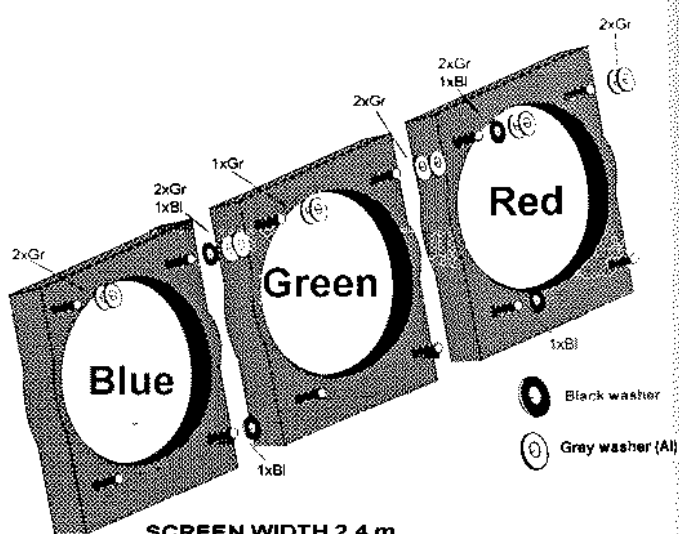


3. Placing the required Washers :

a) optimal focus in the screen width range 1.20 m - 1.90 m



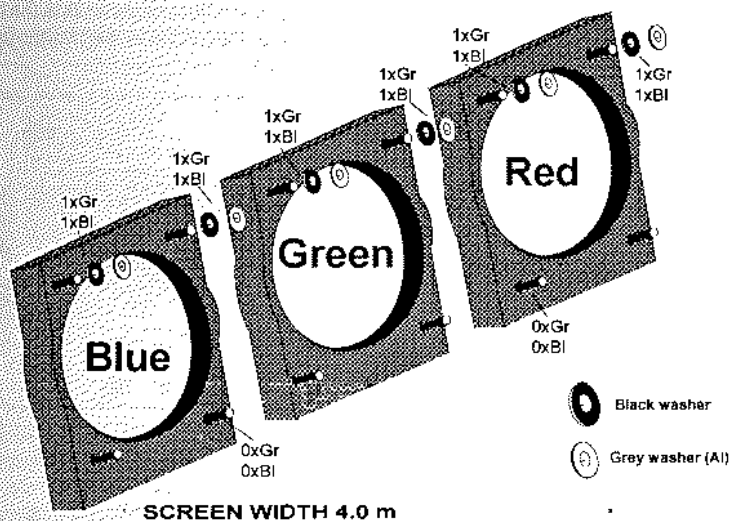
b) optimal focus in the screen width range 1.90 m - 3.20 m



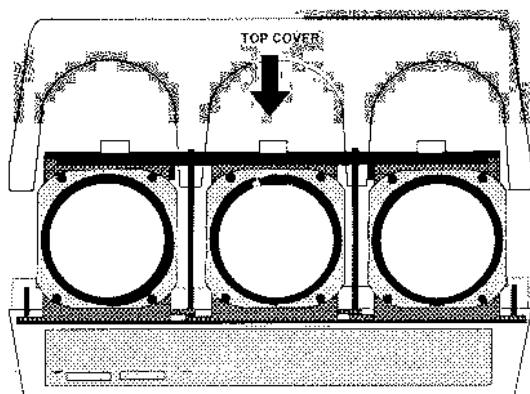
INSTALLATION ADJUSTMENT MODE 32

INSTALLATION ADJUSTMENT MODE

c) optimal focus in the screen width range 3.20 m - 6.00 m



4. Reinstall the lenses and secure the lenses with the available nuts.



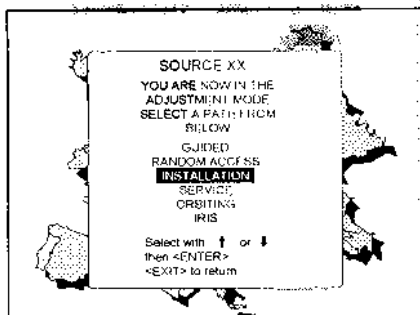
5. Reinstall top cover.

6. Proceed to image focus adjustment

Installation adjustment mode.

It will be necessary to perform several mechanical adjustments while in the Installation Adjustment Mode. Open the 'projector logo' door on the lens end of the projector in order to gain access to the adjustment points.

Use the arrow keys to highlight **INSTALLATION** on the screen menu and then press **ENTER**.



ENTER continues to Optical Focusing.
EXIT returns to operational mode.
ADJUST returns to operational mode.

When entering the installation mode, the projector will automatically switch to the internal pattern on 15 kHz/50 Hz without creating a new adjustment block.

Overview flowchart Installation adjustment mode.

OPTICAL LENS FOCUSING

1. LOOSEN THE NUT ON THE REAR OF THE XXXX LENS. ROTATE THE LENS BARREL TO FOCUS THE CENTER OF THE IMAGE. THEN TIGHTEN THE NUT.
2. LOOSEN THE NUT ON THE FRONT OF THE XXXX LENS AND ROTATE THE FRONT SECTION OF THE LENS TO FOCUS THE CORNERS OF THE IMAGE, THEN TIGHTEN THE NUT.

<ENTER> to continue
<EXIT> to return

RASTER CENTERING

REDUCE THE CONTRAST AND INCREASE THE BRIGHTNESS LEVEL UNTIL THE RASTER IS CENTERED. REPEAT THE IMAGE ON THE FACE OF EACH CRT.

CENTER THE RASTER ON EACH CRT USING THE ARROW KEYS

<ENTER> to continue
<EXIT> to return

CRT PROJECTION ANGLE ADJUSTMENT

BLUE OR GREEN CROSSHAIRS WILL BE DISPLAYED TO ALLOW THE RED AND BLUE CRTS TO BE ALIGNED WITH THE GREEN CRT.

1. LOOSEN BOLTS A, B, C AND D TO PIVOT THE RED CRT. AND BOLDS E, F, G AND H TO PIVOT THE BLUE CRT.

<ENTER> to continue
<EXIT> to return

CRT PROJECTION ANGLE ADJUSTMENT

CRT PROJECTION ANGLE IS THE FIRST STEP OF STATIC CONVERGENCE ADJUSTMENT.

IT IS CRITICAL THAT THE RASTERS ARE CENTERED ON THE CRT FACE PLATES PRIOR TO PERFORMING THIS STEP DURING THIS PROCEDURE RED ON GREEN AND THEN,

<ENTER> continue
<EXIT> to return.

ALIGN CROSSHAIRS

<ENTER> CONTINUE
<EXIT> TO RETURN

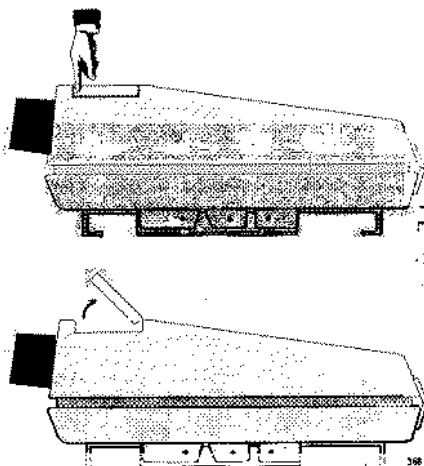
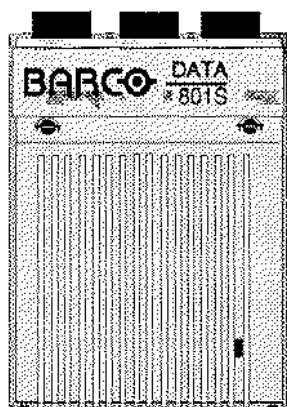
xxxx = red, green or blue
xx = 00 to 05

Access to optical adjustments

The top cover of the BARCODATA 801S has a unique user friendly design. The upper part of the cover with the projector logo can be opened in order to gain access to the optical adjustments.

Opening procedure :

Pull on both sides of the cover to unlock the cover and turn it over to get access to the optical controls.



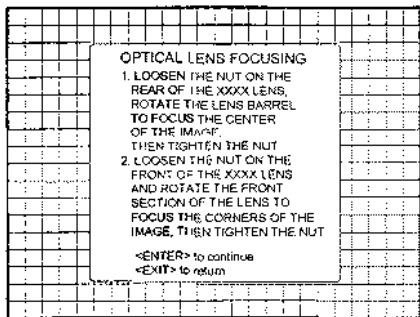
Closing the cover :

Close the cover and press once on the cover to lock.

Optical Lens Focusing:

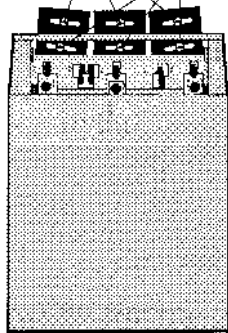
The optical focusing procedure is performed separately for each lens. The appropriate CRT will be switched on as the user proceeds through the optical focusing adjustment sequence.

Each lens has two focus adjustment points, one at the rear of the lens and one at the front. The center of the projected image is focused by loosening the wing nut at the rear end of the lens and rotating the lens barrel until the center of the image is clearly focused. The corners of the projected image are focused by loosening the wing nut at the front end of the lens and rotating the lens barrel until the corners of the image are clearly focused. Repetition of these adjustments may be necessary to optimize optical focusing. Press **ENTER** key to continue.



ENTER continues to Raster centering
EXIT returns to Adjustment mode main menu.
ADJUST returns to operational mode.

corner focusing
center focusing



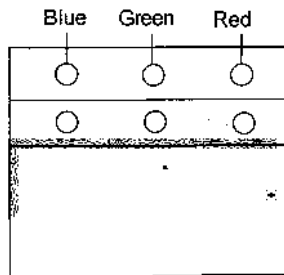
With xxxx = red, green or blue.

Electrical focusing

The electrical focus for red, green and blue is factory preset. When they have to be readjusted, follow the procedure as described below:

- Be sure the lenses are correctly focused.
- Open the top cover.
- Adjust separately the focus control for red, green and blue for the sharpest image on the screen.

Electrical focusing



Raster centering

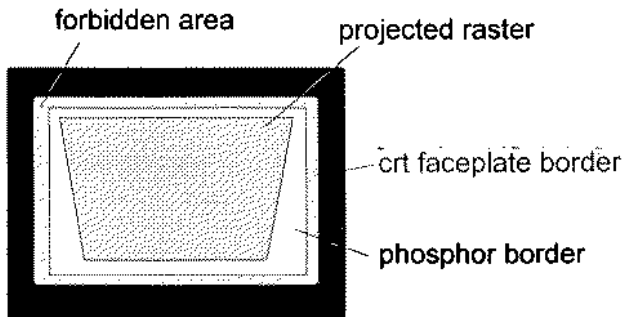
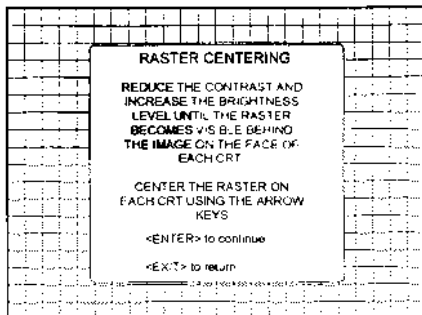
The raster must be centered on the CRT screen surface of each tube, therefore, it is necessary to look into the lenses.

Caution : To avoid eye discomfort while performing these adjustments, reduce the contrast and gradually increase the brightness level until the raster becomes visible behind the image.

Warning : In order to ensure maximum CRT longevity and to avoid CRT damage, do not shift the raster outside the phosphor area of the CRT.

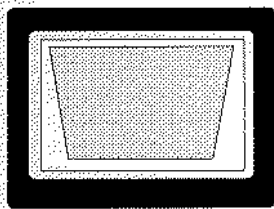
Press **ENTER** to display the raster on the green CRT.

Look into the green lens and shift the raster with the arrow keys until it is centered in the middle of the CRT faceplate.



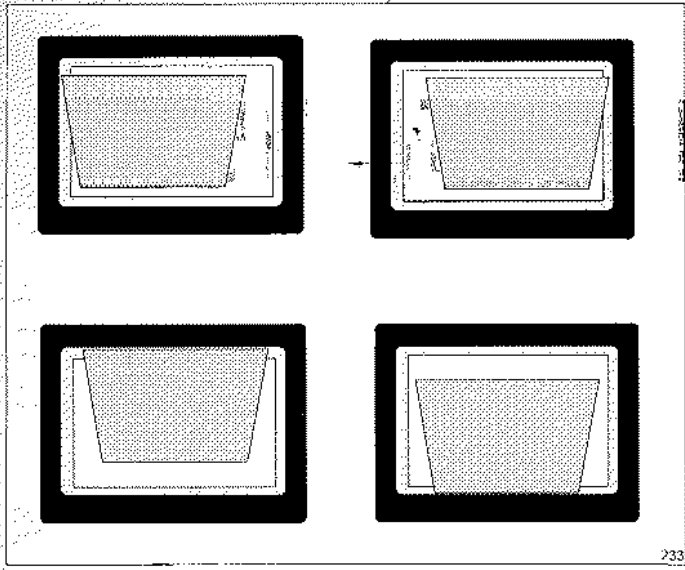
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INSTALLATION ADJUSTMENT MODE



— correct raster position

wrong raster position



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Press **ENTER** to activate the raster on the Red CRT faceplate.
Shift the Red raster with the arrow keys until the raster is centered on the CRT faceplate.

Press **ENTER** to activate the raster on the Blue CRT faceplate.
Shift the Blue raster with the arrow keys until the raster is centered on the CRT faceplate.

Press **ENTER** to continue with the CRT projection angle adjustment

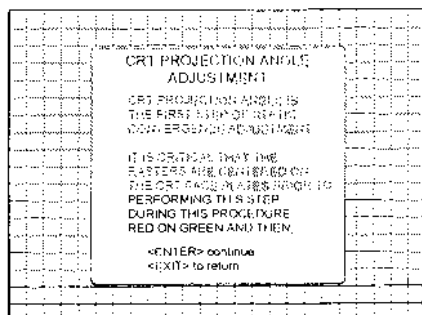
ENTER continues to CRT Projection angle Adjustment.
EXIT returns to Optical focusing.
ADJUST returns to operational mode.

CRT projection angle adjustment

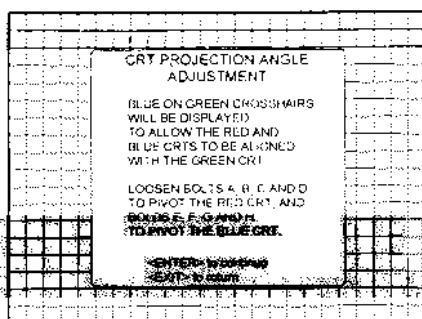
The projection angle of the red and blue CRT's is dependent on the desired size of the projected image. If the centers of green, blue and red do not coincide, the CRT projection angle must be adjusted. *NOTE: never try to correct this misalignment with the shift correction or the static convergence controls.* These controls may only be applied to correct small errors which cannot be corrected by the CRT angle adjustment.

Be sure that the rasters are centered on the CRT face.

Press **ENTER** to start the CRT angle adjustment procedure. A crosshairs (green and red) will be displayed on the screen.



ENTER continues with the second part of the CRT projection angle adjustment.
EXIT returns to Raster shift adjustment.

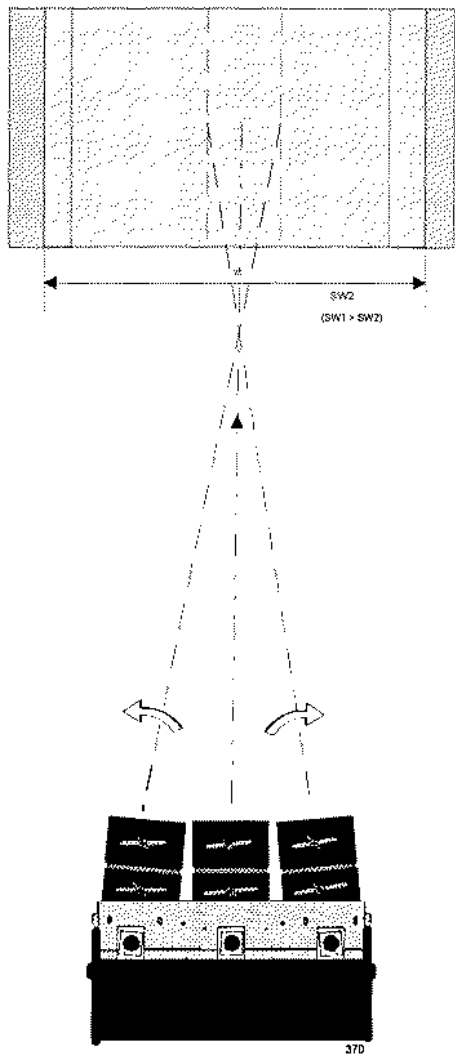
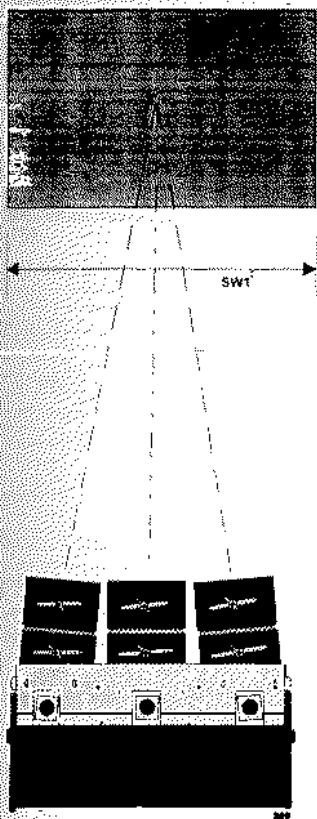


ENTER continues to the crosshairs alignment.
EXIT returns to raster shift adjustment
ADJUST returns to operational mode.

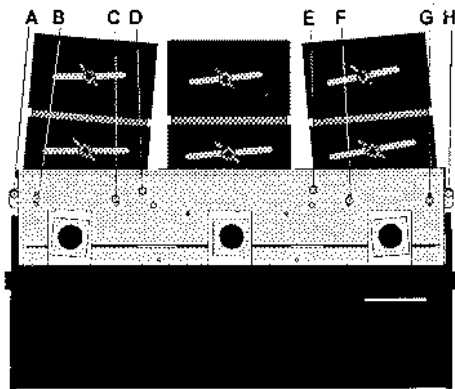
INSTALLATION ADJUSTMENT MODE

Projection angle correctly aligned for screen width SW1:

Projection angle mis-aligned for new screen width SW2. Re-alignment is necessary.



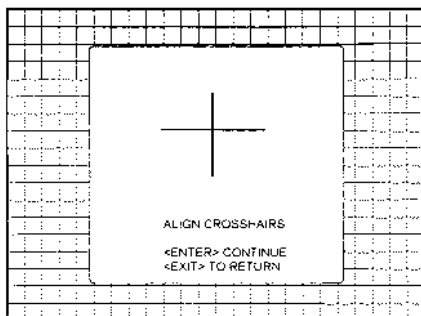
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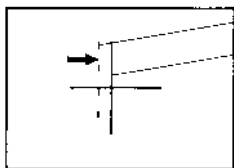
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Loosen bolt A with a 8 mm wrench through the slot in the cabinet (see drawing above).

Loosen bolts B, C and D to pivot the red CRT until the center of the Red image and the center of the Green image coincide. When the angle of the red CRT is corrected, tighten the four bolts.

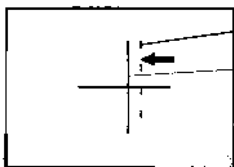


ENTER continues to blue and green crosshairs.
EXIT will return to CRT projection angle adjustment.



red crosshair
 green crosshair

move the red CRT towards the green CRT



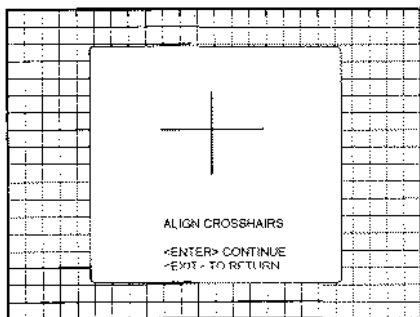
red crosshair
 green crosshair

move the red CRT to the outside, away from the green CRT

INSTALLATION ADJUSTMENT MODE

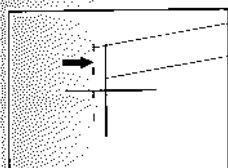
Loosen bolt H with a 8 mm wrench through the slot in the cabinet (see drawing above).

Loosen bolts E, F and G to pivot the blue CRT until the center of the Blue image and the center of the Green image coincide. When the angle of the blue CRT is corrected, tighten the four bolts.



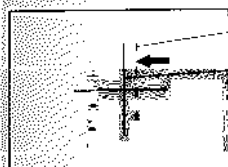
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ENTER continues to the diagonal focusing menu.
EXIT returns to the CRT projection angle adjustment.



blue crosshair
green crosshair

move the blue CRT
to the outside, away
from the green CRT

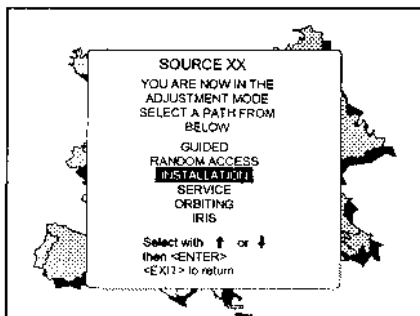


blue crosshair
green crosshair

move the blue CRT
towards the green
CRT

After finishing the installation adjustment procedure, the Path Selection menu returns on the screen. You are now able to start the alignment procedure for the projector. You have the choice between :

- Guided adjustment procedure
- Random Access Adjustment procedure.



ENTER continues to the chosen path.
EXIT returns to operational mode.
ADJUST returns to operational mode.

Alignment of the projector.

Overview of the corrections.

For detailed information about these corrections and procedures to be followed, see owner's manual.

Shift corrections for the Red, Green and Blue image.

Left-Right adjustments

- Vertical center line bow and skew
- Side keystone adjustment
- Side bow adjustment
- Horizontal size adjustment

Top-bottom adjustments

- Horizontal centerline bow and skew
- Top keystone adjustment
- Top bow adjustment
- Bottom keystone adjustment
- Bottom bow adjustment

Size-linearity adjustments

- Horizontal size adjustment
- Vertical linearity adjustment
- Vertical size adjustment
- Horizontal phase adjustment

Convergence adjustments

- Green only
- Red on Green
- Blue on Green